SAFETY DATA SHEET

LONTREL™ Turf and Ornamental

Version	Revision Date:	SDS Number:	Date of last issue: 01/14/2022
1.2	02/17/2022	800080003177	Date of first issue: 01/13/2022

Corteva Agriscience™ encourages you and expects you to read and understand the entire SDS as there is important information throughout the document. This SDS provides users with information relating to the protection of human health and safety at the workplace, protection of the environment and supports emergency response. Product users and applicators should primarily refer to the product label attached to or accompanying the product container. This Safety Data Sheet adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. IDENTIFICATION

Product name : LONTREL™ Turf and Ornamental

Manufacturer or supplier's details

COMPANY IDENTIFICATION

Manufacturer/importer : CORTEVA AGRISCIENCE LLC
9330 ZIONSVILLE RD
INDIANAPOLIS, IN, 46268-1053
UNITED STATES

Customer Information Number : 800-992-5994

E-mail address : customerinformation@corteva.com

Emergency telephone : INFOTRAC (CONTRACT 84224).

800-992-5994 or 317-337-6009

Recommended use of the chemical and restrictions on use

Recommended use : End use herbicide product

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids : Category 3

GHS label elements

Hazard pictograms :

Signal Word : Warning

Hazard Statements : H226 Flammable liquid and vapor.

Precautionary Statements :

Prevention:

P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P280 Wear protective gloves/ eye protection/ face protection.

Response:

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Clopyralid monoethanolamine salt	57754-85-5	40.9
propan-2-ol	67-63-0	5
Alkylphenol alkoxylate	69029-39-6	>= 1 - < 3
Balance	Not Assigned	> 50

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

If inhaled : Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.
If breathing is difficult, oxygen should be administered by qualified personnel.

In case of skin contact : Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
Suitable emergency safety shower facility should be available

		in work area.
In case of eye contact	:	Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice. Suitable emergency eye wash facility should be available in work area.
If swallowed	:	No emergency medical treatment necessary.
Most important symptoms and effects, both acute and delayed	:	None known.
Protection of first-aiders	:	First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Notes to physician	:	Maintain adequate ventilation and oxygenation of the patient. May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. Hemodialysis may be of benefit if substantial amounts have been ingested and the patient is showing signs of intoxication. Consider hemodialysis for patients with persistent hypotension or coma unresponsive to standard therapy (isopropanol levels >400 - 500 mg/dl). (Goldfrank, Toxicological Emergencies 7th ed., 2002; King, JAMA, 1970, 211:1855). No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment. Repeated excessive exposure may aggravate preexisting lung disease.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical
Unsuitable extinguishing media	:	Do not use direct water stream. High volume water jet
Specific hazards during fire fighting	:	Exposure to combustion products may be a hazard to health. Vapors may form explosive mixtures with air. Do not allow run-off from firefighting to enter drains or water courses. Flash back possible over considerable distance.
Hazardous combustion products	:	During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to:

Nitrogen oxides (NOx)
Hydrogen chloride gas
Carbon oxides

Specific extinguishing methods : Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.

Further information : Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed.
Do not use a solid water stream as it may scatter and spread fire.
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.
Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
Remove all sources of ignition.
Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions : If the product contaminates rivers and lakes or drains inform respective authorities.
Discharge into the environment must be avoided.
Prevent further leakage or spillage if safe to do so.
Prevent spreading over a wide area (e.g., by containment or oil barriers).
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.
Prevent from entering into soil, ditches, sewers, underwater.
See Section 12, Ecological Information.

Methods and materials for containment and cleaning up : Clean up remaining materials from spill with suitable absorbant.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in.
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped,
Recovered material should be stored in a vented container.
The vent must prevent the ingress of water as further reaction with spilled materials can take place which could lead to over-

pressurization of the container.
Wipe up with absorbent material (e.g. cloth, fleece).
Non-sparking tools should be used.
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Suppress (knock down) gases/vapors/mists with a water spray jet.
See Section 13, Disposal Considerations, for additional information.

SECTION 7. HANDLING AND STORAGE

Local/Total ventilation	:	Use with local exhaust ventilation. Use only in an area equipped with explosion proof exhaust ventilation.
Advice on safe handling	:	Avoid formation of aerosol. Non-sparking tools should be used. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Do not breathe vapors/dust. Do not smoke. Handle in accordance with good industrial hygiene and safety practice. Smoking, eating and drinking should be prohibited in the application area. Keep container tightly closed. Keep away from heat and sources of ignition. Take precautionary measures against static discharges. Take care to prevent spills, waste and minimize release to the environment. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.
Conditions for safe storage	:	Store in a closed container. No smoking. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in properly labeled containers. Keep tightly closed. Store in accordance with the particular national regulations.
Materials to avoid	:	Strong oxidizing agents Organic peroxides Flammable solids Pyrophoric liquids Self-heating substances and mixtures Substances and mixtures which in contact with water emit flammable gases Explosives Gases
Packaging material	:	Unsuitable material: None known.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
propan-2-ol	67-63-0	TWA	150 ppm	Dow IHG
		STEL	300 ppm	Dow IHG
		TWA	200 ppm	ACGIH
		STEL	400 ppm	ACGIH
		TWA	400 ppm 980 mg/m3	OSHA Z-1
Alkylphenol alkoxylate	69029-39-6	TWA	2 mg/m3	Dow IHG

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
propan-2-ol	67-63-0	Acetone	Urine	End of shift at end of work-week	40 mg/l	ACGIH BEI

Engineering measures : Use engineering controls to maintain airborne level below exposure limit requirements or guidelines.
If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation.
Local exhaust ventilation may be necessary for some operations.

Personal protective equipment

Respiratory protection : Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, use an approved air-purifying or positive-pressure supplied-air respirator depending on the potential airborne concentration.
For emergency and other conditions where the exposure guideline may be exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply.
In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.

Hand protection

Remarks : Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Oth-

er chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Eye protection : Use safety glasses (with side shields).
If exposure causes eye discomfort, use a full-face respirator.

Skin and body protection : Wear clean, body-covering clothing.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid.
Color	:	Red to brown
Odor	:	Sweet
Odor Threshold	:	No data available
pH	:	7.5 - 8.0
Melting point/range	:	Not applicable
Freezing point		No data available
Boiling point/boiling range	:	212 °F / 100 °C
Flash point	:	117.0 °F / 47.2 °C Method: closed cup
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	31.326 hPa (68 °F / 20 °C)
Relative vapor density	:	1.06 (68 °F / 20 °C)
Density	:	1.161 g/cm3 (68 °F / 20 °C) Method: Calculated.
Solubility(ies)		
Water solubility	:	Miscible with water
Partition coefficient: n-octanol/water	:	No data available.
Autoignition temperature	:	No data available

Viscosity
Viscosity, dynamic : 7 cP

Explosive properties : No data available

Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.
Chemical stability : No decomposition if stored and applied as directed.
Stable under normal conditions.
Possibility of hazardous reactions : Stable under recommended storage conditions.
No hazards to be specially mentioned.
Vapors may form explosive mixture with air.
May form explosive dust-air mixture.

Conditions to avoid : Heat, flames and sparks.
Incompatible materials : None.
Hazardous decomposition products : Decomposition products depend upon temperature, air supply and the presence of other materials.
Decomposition products can include and are not limited to:
Nitrogen oxides (NOx)
Hydrogen chloride gas
Carbon oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat, male and female): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 3.0 mg/l
Exposure time: 4 h
Test atmosphere: Aerosol
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Maximum attainable concentration.

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

Components:

Clopyralid monoethanolamine salt:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 2.6 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Maximum attainable concentration.

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute dermal toxicity

propan-2-ol:

Acute oral toxicity : LD50 (Rat): 5,840 mg/kg
Method: OECD 401 or equivalent

Acute inhalation toxicity : LC50 (Rat, male and female): > 10000 ppm
Exposure time: 6 h
Test atmosphere: vapor

Acute dermal toxicity : LD50 (Rabbit): > 12,800 mg/kg

Alkylphenol alkoxylate:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute dermal toxicity : LD50 (Rabbit, male and female): > 2,000 mg/kg

Skin corrosion/irritation

Product:

Species : Rabbit
Result : No skin irritation

Components:

propan-2-ol:

Species : Rabbit
Result : No skin irritation

Alkylphenol alkoxylate:

Species : Rabbit
Result : No skin irritation

Serious eye damage/eye irritation

Product:

Species : Rabbit
Result : No eye irritation

Components:

Clopyralid monoethanolamine salt:

Species : Rabbit
Result : No eye irritation

propan-2-ol:

Species	:	Rabbit
Result	:	Eye irritation

Alkylphenol alkoxylate:

Species	:	Rabbit
Result	:	No eye irritation

Respiratory or skin sensitization

Product:

Species	:	Guinea pig
Assessment	:	Does not cause skin sensitization.

Components:

Clopyralid monoethanolamine salt:

Species	:	Mouse
Assessment	:	Does not cause skin sensitization.

propan-2-ol:

Species	:	Guinea pig
Assessment	:	Does not cause skin sensitization.

Alkylphenol alkoxylate:

Species	:	Guinea pig
Assessment	:	Does not cause skin sensitization.

Germ cell mutagenicity

Components:

Clopyralid monoethanolamine salt:

Germ cell mutagenicity - Assessment	:	In vitro genetic toxicity studies were negative., Animal genetic toxicity studies were negative.

propan-2-ol:

Germ cell mutagenicity - Assessment	:	In vitro genetic toxicity studies were negative., Animal genetic toxicity studies were negative.

Alkylphenol alkoxylate:

Germ cell mutagenicity – Assessment	:	In vitro genetic toxicity studies were negative.

Carcinogenicity

Components:

Clopyralid monoethanolamine salt:

Carcinogenicity - Assessment : Similar formulations did not cause cancer in laboratory animals.

propan-2-ol:

Carcinogenicity - Assessment : Did not cause cancer in laboratory animals.

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Components:

Clopyralid monoethanolamine salt:

Reproductive toxicity - Assessment : In animal studies, active ingredient did not interfere with reproduction.
Clopyralid caused birth defects in test animals, but only at greatly exaggerated doses that were severely toxic to the mothers. No birth defects were observed in animals given clopyralid at doses several times greater than those expected during normal exposure.

propan-2-ol:

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction., In animal studies, did not interfere with fertility.
Isopropanol has been toxic to the fetus in laboratory animals at doses toxic to the mother.

Alkylphenol alkoxylate:

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction., In animal studies, did not interfere with fertility.
Did not cause birth defects or any other fetal effects in laboratory animals.

STOT-single exposure

Product:

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Components:

Clopyralid monoethanolamine salt:

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

propan-2-ol:

Routes of exposure : Ingestion
Target Organs : Central nervous system
Assessment : May cause drowsiness or dizziness.

Alkylphenol alkoxylate:

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Repeated dose toxicity

Components:

Clopyralid monoethanolamine salt:

Remarks : Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

propan-2-ol:

Remarks : In animals, effects have been reported on the following organs:
Kidney.
Liver.
Kidney effects have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans.
Observations in animals include:
Lethargy.

Alkylphenol alkoxylate:

Remarks : In animals, effects have been reported on the following organs:
Kidney.
Liver.

Aspiration toxicity

Product:

Based on available information, aspiration hazard could not be determined.

Components:

Clopyralid monoethanolamine salt:

Based on available information, aspiration hazard could not be determined.

propan-2-ol:
Aspiration into the lungs may occur during ingestion or vomiting, resulting in rapid absorption and injury to other body systems.

Alkylphenol alkoxylate:
Based on physical properties, not likely to be an aspiration hazard.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Clopyralid monoethanolamine salt:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l Exposure time: 96 h Test Type: static test Method: OECD Test Guideline 203 or Equivalent
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202 or Equivalent
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 30 mg/l Exposure time: 72 h ErC50 (Myriophyllum spicatum): > 3 mg/l Exposure time: 14 d Remarks: For similar material(s): NOEC (Myriophyllum spicatum): 0.0089 mg/l Exposure time: 14 d Remarks: For similar material(s):
M-Factor (Chronic aquatic toxicity)	:	10
Toxicity to terrestrial organisms	:	oral LD50 (Anas platyrhynchos (Mallard duck)): 1465 - 2000 mg/kg bodyweight. Exposure time: 14 d Remarks: For similar active ingredient(s). dietary LC50 (Colinus virginianus (Bobwhite quail)): > 5000 mg/kg diet. Exposure time: 8 d Remarks: For similar active ingredient(s). contact LD50 (Apis mellifera (bees)): > 100 micrograms/bee Exposure time: 48 d Remarks: For similar active ingredient(s). oral LD50 (Apis mellifera (bees)): > 98.1 micrograms/bee

Exposure time: 48 d
Remarks: For similar active ingredient(s).

Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

propan-2-ol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 9,640 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): > 1,000 mg/l
Exposure time: 24 h
Test Type: static test
Method: OECD Test Guideline 202 or Equivalent

Toxicity to algae/aquatic plants : NOEC (alga Scenedesmus sp.): 1,800 mg/l
End point: Growth inhibition (cell density reduction)
Exposure time: 7 d
Test Type: static test

ErC50 (alga Scenedesmus sp.): > 1,000 mg/l
End point: Growth rate inhibition
Exposure time: 72 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 30 mg/l
Exposure time: 21 d
Test Type: semi-static test

Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l

Alkylphenol alkoxylate:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 4.8 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203 or Equivalent

LC50 (Oncorhynchus mykiss (rainbow trout)): 3.7 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 10.5 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202 or Equivalent

Toxicity to terrestrial organisms : dietary LC50 (Apis mellifera (bees)): > 105 micrograms/bee
Exposure time: 2 d

contact LD50 (Apis mellifera (bees)): > 100 micrograms/bee
Exposure time: 2 d

No Observed Effects Level (NOEL) (Colinus virginianus (Bobwhite quail)): 2,250 mg/kg

oral LD50 (Colinus virginianus (Bobwhite quail)): > 2,250 mg/kg

Ecotoxicology Assessment

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

Persistence and degradability

Components:

Clopyralid monoethanolamine salt:

Biodegradability : Result: Not biodegradable.
Remarks: For similar active ingredient(s).
Clopyralid.

propan-2-ol:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 95 %
Exposure time: 21 d
Method: OECD Test Guideline 301E or Equivalent
Remarks: 10-day Window: Pass

Biodegradation: 53 %
Exposure time: 5 d
Method: Other guidelines
Remarks: 10-day Window: Pass

Biochemical Oxygen Demand (BOD) : 20 - 72 %
Incubation time: 5 d

78 - 86 %
Incubation time: 20 d

Chemical Oxygen Demand (COD) : 2.09 kg/kg
Method: Estimated.

ThOD : 2.40 kg/kg
Method: Estimated.

Photodegradation : Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Rate constant: 7.26E-12 cm3/s
Method: Estimated.

Alkylphenol alkoxylate:

Biodegradability : Result: Not biodegradable.

Remarks: Biodegradation under aerobic laboratory conditions is below detectable limits (BOD20 or BOD28/ThOD < 2.5%). Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

Chemical Oxygen Demand (COD) : 1.78 kg/kg

ThOD : 2.35 kg/kg

Bioaccumulative potential

Components:

Clopyralid monoethanolamine salt:

Partition coefficient: n-octanol/water : Remarks: For similar active ingredient(s).
Clopyralid.
Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

propan-2-ol:

Partition coefficient: n-octanol/water : Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

log Pow: 0.05
Method: Measured

Alkylphenol alkoxylate:

Partition coefficient: n-octanol/water : Remarks: No bioconcentration is expected because of the relatively high water solubility.
May foam in water.

Balance:

Partition coefficient: n-octanol/water : Remarks: No relevant data found.

Mobility in soil

Components:

Clopyralid monoethanolamine salt:

Distribution among environmental compartments : Remarks: For similar active ingredient(s).
Clopyralid.
Potential for mobility in soil is very high (Koc between 0 and 50).

propan-2-ol:

Distribution among environmental compartments : Remarks: Potential for mobility in soil is very high (Koc between 0 and 50).

Koc: 1.1
Method: Estimated.

Balance:

Distribution among environmental compartments : Remarks: No relevant data found.

Other adverse effects

Components:

Clopyralid monoethanolamine salt:

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

propan-2-ol:

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Alkylphenol alkoxylate:

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Balance:

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the

material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.
If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 1993
Proper shipping name	:	FLAMMABLE LIQUID, N.O.S. (Isopropanol)
Class	:	3
Packing group	:	III
Labels	:	3

IATA-DGR

UN/ID No.	:	UN 1993
Proper shipping name	:	Flammable liquid, n.o.s. (Isopropanol)
Class	:	3
Packing group	:	III
Labels	:	Flammable Liquids
Packing instruction (cargo aircraft)	:	366
Packing instruction (passenger aircraft)	:	355

IMDG-Code

UN number	:	UN 1993
Proper shipping name	:	FLAMMABLE LIQUID, N.O.S. (Isopropanol)
Class	:	3
Packing group	:	III
Labels	:	3
EmS Code	:	F-E, S-E
Marine pollutant	:	no
Remarks	:	Stowage category A

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

UN/ID/NA number	:	NA 1993
Proper shipping name	:	Combustible liquid, n.o.s. (Isopropanol)
Class	:	CBL
Packing group	:	III
Labels	:	FLAMMABLE LIQUID
ERG Code	:	128
Marine pollutant	:	no

Further information

For US Domestic transport, according to 49 CFR 173.150 f (1), A flammable liquid with a flash point at or above 38 °C (100 °F) that does not meet the definition of any other hazard class may be reclassed as a combustible liquid. This provision does not apply to transportation by vessel or aircraft, except where other means of transportation is impracticable., This product is only classified in containers over 119 gallons or 450 liters. Not regulated if shipped in packages less than or equal to 119 gallons (450 liters). If transporting by vessel or aircraft, unless other means of transportation is impracticable, the product must be shipped as a flammable liquid.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

propan-2-ol	67-63-0	>= 5 - < 10 %

US State Regulations

Pennsylvania Right To Know

propan-2-ol	67-63-0

California Prop. 65

WARNING: This product can expose you to chemicals including sulphuric acid, hexachlorobenzene, which is/are known to the State of California to cause cancer, and hexachlorobenzene, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

The ingredients of this product are reported in the following inventories:

TSCA : Product contains substance(s) not listed on TSCA inventory.

TSCA list

The following substance(s) is/are subject to a Significant New Use Rule:

4,5,6-Trichloro-2-pyridinecarboxylic acid	496849-77-5
pentachlorobenzene	608-93-5

No substances are subject to TSCA 12(b) export notification requirements.

Federal Insecticide, Fungicide and Rodenticide Act

EPA Registration Number : 62719-305

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for

workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

CAUTION

Causes moderate eye irritation
Harmful if absorbed through skin

SECTION 16. OTHER INFORMATION

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	:	ACGIH - Biological Exposure Indices (BEI)
Dow IHG	:	Dow Industrial Hygiene Guideline
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
Dow IHG / TWA	:	Time Weighted Average (TWA):
Dow IHG / STEL	:	Short term exposure limit
Dow IHG / TWA	:	Time weighted average
OSHA Z-1 / TWA	:	8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the

Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 02/17/2022

Product code: XRM-3972

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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